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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,338	03/23/2007	Takashi Tsujimoto	2006-0828A	6226

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EXAMINER	
WAITS, ALAN B	

ART UNIT	PAPER NUMBER
3656	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,338	TSUJIMOTO, TAKASHI	
	Examiner	Art Unit	
	ALAN B. WAITS	3656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 April 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *5-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by Lott USP 1426578.

Re clm 1:

- Inner ring (12, fig 2)
- An outer ring (16, fig 2)
- Multiple tapered rollers (15, fig 2) rollably disposed between said inner and outer rings (fig 2)
- A cage (26, fig 2) for holding said tapered rollers at predetermined circumferential intervals
- A roller coefficient is larger than .94 (fig 2)

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weidinger USP 6213648 in view of JP 2002276672.

Weidinger discloses a similar device comprising:

Re clm 5:

- An inner ring (inner portion of roller bearing inherent to a roller bearing, c 1, lines 38-42)
- An outer ring (outer portion of roller bearing inherent to a roller bearing, c 1, lines 38-42)
- Multiple tapered rollers (7, c 2, lines 38-39) rollably disposed between said inner and outer rings
- A cage (fig 2) for holding said tapered rollers at predetermined circumferential intervals

Weidinger does not disclose:

- A roller coefficient larger than .94

JP672 teaches a full roller bearing (abstract, fig 1) for the purpose of improving the load capacity of the bearing.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Weidinger and provide:

- A roller coefficient larger than .94

for the purpose of improving the load capacity of the bearing.

Re clm 6, Weidinger further discloses:

- Said cage includes pockets (20, fig 2) for holding said tapered rollers

- A window angle of each of said pockets (10, fig 2)

Weidinger does not disclose:

- Said window angle is in a range of 55° to 80°

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Weidinger and provide:

- Said window angle is in a range of 55° to 80°

since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller,* 105 USPQ 233.

3. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weidinger US 6213648 in view of JP 2002276672 as applied to claim 6 above, and further in view of Kinoshita US 5964536.

Re clm 7, Weidinger in view of JP672 further discloses:

- Pole sections extending between adjacent ones of said pockets (section of cage between ribs 15, fig 2)

Weidinger in view of JP672 does not disclose:

- Each of said pole sections including a protruding section having a convex shape protruding toward said outer ring

Kinoshita teaches a cage comprising:

- Each of said pole sections (46, fig 4) including a protruding section (50, fig 4) having a convex shape protruding toward said outer ring

for the purpose of eliminating misfits of the cage (col 4, lines 20-37).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide:

- Each of said pole sections including a protruding section having a convex shape protruding toward said outer ring

for the purpose of eliminating misfits of the cage.

Re clm 8, Kinoshita does not explicitly disclose:

- A radius of curvature of each of said protruding sections is 70 to 90% of a radius of curvature of an inner surface of said outer ring, as viewed in an axial direction of the tapered roller bearing

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Weidinger in view of JP 672 and in further view of Kinoshita and provide:

- A radius of curvature of each of said protruding sections is 70 to 90% of a radius of curvature of an inner surface of said outer ring, as viewed in an axial direction of the tapered roller bearing

since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller,* 105 USPQ 233.

Re clm 9, Kinoshita's cage further comprises:

- The cage is formed of an engineering plastic (fig 3)

4. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weidinger US 6213648 in view of JP 2002276672 as applied to claim 5 above, and further in view of Kinoshita US 5964536.

Re clm 10, Weidinger in view of JP672 further discloses:

- Pole sections extending between adjacent ones of said pockets (section of cage between ribs 15, fig 2)

Weidinger in view of JP672 does not disclose:

- Each of said pole sections including a protruding section having a convex shape protruding toward said outer ring

Kinoshita teaches a cage comprising:

- Each of said pole sections (46, fig 4) including a protruding section (50, fig 4) having a convex shape protruding toward said outer ring

for the purpose of eliminating misfits of the cage (col 4, lines 20-37).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide:

- Each of said pole sections including a protruding section having a convex shape protruding toward said outer ring

for the purpose of eliminating misfits of the cage.

Re clm 11, Kinoshita does not explicitly disclose:

- A radius of curvature of each of said protruding sections is 70 to 90% of a radius of curvature of an inner surface of said outer ring, as viewed in an axial direction of the tapered roller bearing

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Weidinger in view of JP 672 and in further view of Kinoshita and provide:

- A radius of curvature of each of said protruding sections is 70 to 90% of a radius of curvature of an inner surface of said outer ring, as viewed in an axial direction of the tapered roller bearing

since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller,* 105 USPQ 233.

Re clm 12, Kinoshita's cage further comprises:

- The cage is formed of an engineering plastic (fig 3)

Double Patenting

5. Claims 5 and 12 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1 and 3 of copending Application No. 11/212908. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

6. Claim 5, 6, 9, and 12 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1, 2, 3, 4 and 5 of copending Application No. 11578327. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

7. Claims 5, 6, 9 and 12 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1, 2, 3 and 5 of copending Application No.

11139978. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Response to Arguments

8. Applicant's arguments filed 4/27/2009 have been fully considered but they are not persuasive. Applicant argues that Lott cannot anticipate claim 5 because the drawings are not disclosed to be to scale. Applicant further argues that proportions of features in a drawing are not evidence of actual proportions when drawings are not to scale. Although the drawings may not be to scale, MPEP 2125 clearly states "Drawings and pictures can anticipate claims if they clearly show the structure which is claimed. The drawings must be evaluated for what they reasonably disclose and suggest to one of ordinary skill in the art." Although fig 2 may not be to scale, the figure clearly shows the rollers touching one another. This would suggest to one of ordinary skill in the art that a roller coefficient larger than .94 should be used (the coefficient in the drawing being 1, as rollers are all touching).

9. Applicant's arguments with respect to claims 2-4 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALAN B. WAITS whose telephone number is (571)270-3664. The examiner can normally be reached on Monday through Friday 7:30 am to 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alan B Waits/
Examiner, Art Unit 3656

/Richard WL Ridley/
Supervisory Patent Examiner, Art Unit 3656